

**Virginia Parks Fish Inventory  
Mid-Atlantic Network  
2002 Annual Report**

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**Start Date:** August 7, 2002

**End Date:** September 3, 2002

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### **Abstract:**

During August and early September, 2002, fish species inventories were initiated in wadable aquatic habitats within five Mid-Atlantic Network parks including Fredericksburg and Spotsylvania National Military Park (FRSP), Richmond National Battlefield (RICH), Petersburg National Battlefield (PETE), Appomattox Court House National Historical Park (APCO) and Booker T. Washington National Monument (BOWA). All of the 2002 fish inventory fieldwork was conducted with backpack electrofishing gear. Sampling efforts were stratified among 21 sites along 16 streams or other aquatic habitats. A total of 59 fish species were identified from among thousands of individual fish captured at all of the sites combined during 2002. Species diversity within individual parks ranged from 8 at Petersburg to 32 at Fredericksburg. At Richmond, 24 species were encountered. At Appomattox Court House, 27 species were encountered and 28 species were encountered within Booker T. Washington. Species diversity appeared to be most influenced by the number streams present within each park, stream size and/or diversity of habitat types within/between streams.

### **Significant Findings**

- Fish species diversity and relative density is fairly high in small to medium sized perennial streams within the upper Coastal Plain and Piedmont physiographic provinces of Virginia.
- In a general sense, all of the fish species encountered at all sites were native species. The only noteworthy exception to this is the acknowledgement that members of the Centrarchid family (sunfish and bass) have been widely dispersed throughout the continental United States as the result of state sponsored stocking programs.

- To date, no listed endangered, threatened or sensitive species have been found within any aquatic system in any of the parks.

### **Management Recommendations**

- The park lands included in this inventory are relatively small in area and do not generally contain or otherwise have control of the headwaters of aquatic systems present. Many if not most streams within these parks will be affected by activities associated with development, agriculture or other disturbances further upstream. Where feasible, park staff should encourage programs and projects that result in improved water quality in areas upstream from the parks.

### **Introduction/Background**

On April 3, 2001, a scoping meeting at Richmond National Battlefield was held to plan inventories of vertebrates and vascular plants in the Mid-Atlantic Network (MAN) parks. The MAN includes eleven national parks, primarily located within Virginia and Pennsylvania, that contain significant natural resources. An additional three Virginia/Maryland parks representing the Coastal and Barrier Network (CBN) were also included in this assessment. In a preliminary search of existing inventory information from MAN and CBN parks within Virginia, many gaps were identified in the status of vertebrate groups and most notably with fish. Of ten Virginia/Maryland parks from the combined networks only two (Shenandoah National Park and Colonial National Monument) had any known inventory information for fish.

Site assessments were conducted by Shenandoah staff during the spring of 2002 of aquatic habitats present within the confines of FRSP, RICH, PETE, APCO and BOWA. In most cases, the streams and small ponds encountered within all of the parks combined were sufficiently accessible for sampling with backpack electrofishing gear. The few large ponds or deep cut stream channels encountered within RICH and PETE will be more efficiently sampled from a boat shocker platform through coordination with the Virginia Department of Game and Inland Fisheries (VDGIF).

### **Objectives**

- Complete the documentation of 90% of fish species present within each of the MAN parks within Virginia that currently lack those data.

### **Study Area Description**

#### **Fredericksburg & Spotsylvania National Military Park**

The nine units comprising Fredericksburg and Spotsylvania National Military Park are stratified among portions of the upper Coastal Plain, the Piedmont Lowlands and the Piedmont Foothill physiographic provinces (Jenkins and Burkhead, 1994) in north-central Virginia. The park also stratifies portions of the York and Rappahannock Drainages which are the only two of Virginia's ten major drainages that occur entirely within the state. The resulting diversity of aquatic

habitats sampled included sections along Hazel Run, upper Deep Run and Wilderness Run within the Rappahannock Drainage, and upper Lewis Run and an unnamed tributary of the Ni River within the York Drainage. Due to the low flow levels at the time of sampling, most of the sites ranged from 3 – 7 meters in width and were underlain by substrates ranging from unstable muck deposits to sand and cobble/gravel.

### **Richmond National Battlefield**

The eight units comprising Richmond National Battlefield that contain natural habitats all occur within the upper Coastal Plain physiographic province in east-central Virginia and all of the associated aquatic systems are within the James Drainage. Aquatic systems sampled included sections of Beaverdam Creek, Boatswain Creek and Bloody Run which are first or second order tributaries of the Chickahominy River, and a section on each of Western Run and Crewes Channel which are second order tributaries of the James River. Low water levels also facilitated sampling at Richmond, particularly at Beaverdam Creek and at Crewes Channel which would otherwise not have been practicable with backpack electrofishing gear. Site widths ranged from less than a meter at Bloody Run to greater than 20 meters at the Crewes Channel Pond. Substrates were dominated by muck deposits although sand and gravel deposits were encountered along Western Run.

### **Petersburg National Battlefield**

The main unit of Petersburg National Battlefield is situated on the upper Coastal Plain very close to the Fall Zone, a geologic zone that distinctly divides the Coastal Plain and Piedmont. Petersburg Battlefield is primarily located along the northeastern side of the City of Petersburg in southeastern Virginia. The two principal streams that flow through the main unit (Harrison Creek and Poor Creek) are first and second order tributaries of the Appomattox River in the James Drainage. Both stream channels were fairly narrow, ranging less than a meter to 3 meters in width. At the time of sampling, Poor Creek was nearly dry with minimal flow in the upper reaches to a few isolated pools in the lower reaches. The streambed was completely dry on the lower park boundary. Substrates ranged from sand and muck on Harrison Creek to sand and clay on Poor Creek.

### **Appomattox Court House National Historical Park**

The land area comprising Appomattox Court House National Historical Park spans an 8.4 mile section of the upper Appomattox River and several small tributaries including Plain Run Branch in the headwater region of the Appomattox River watershed. The park is located along the boundary of the Piedmont Lowlands and the Piedmont Foothill physiographic provinces and is within the James Drainage in south-central Virginia. Three sections of the Appomattox River and one section along Plain Branch Run were sampled during a time of fairly low flow. Channel widths varied from slightly more than a meter on Plain Branch to the 3 – 7 meter range on the Appomattox River at the time of sampling. Substrates included bedrock formations, cobble, gravel, pebble, sand, clay, mud and muck deposits.

## **Booker T. Washington National Monument**

The land area associated with Booker T. Washington National Monument contains an approximate 0.7 mile section of Gills Creek and an equally short section of a small tributary named Jack-O-Lantern Branch. Gills Creek is a minor feeder stream of Smith Mountain Lake, all of which are situated along the western boundary of the Piedmont Foothill physiographic province in southwestern Virginia. This small park is located within the Roanoke Drainage which ultimately drains into Albemarle Sound in northeastern North Carolina. During normal flow levels, Gills Creek has an average width of 8.7 meters. During low flow conditions at the time of sampling, channel widths ranged from 3 – 8 meters. Jack-O-Lantern Branch is much smaller averaging barely one meter in width on most sections during periods of reduced flows. The Jack-O-Lantern Branch contains considerable silt deposits due to the influence of a major development upstream. Otherwise, this small tributary is underlain by deposits composed of clay, sand and gravel. In a like manner but on a much larger scale, Gills Creek flows across deposits of clay, sand and gravel. Typical of the land area in the proximity of BOWA, there is an abundance of mica fragments present within the streambed.

## **Methods**

Throughout all of the streams or other aquatic systems in each of the five parks sampled, qualitative backpack electrofishing techniques were employed as described in the Shenandoah Fisheries Monitoring Protocol (Atkinson 2003). Basically, this involves either one or two electrofishing crews depending on stream width, working upstream in a line abreast formation netting every fish that enters and is affected by the electrical field(s) generated. Qualitative techniques involve a single pass through each section with the electrofishing gear as opposed to three-pass or quantitative techniques more commonly employed for population level monitoring.

Within each stream, sampling was initiated in downstream or boundary locations. Where longer sections of perennial streams were encountered such as the upper Appomattox River and Gills Creek, several sections of approximately 100m in length were sampled with emphasis on all representative and any unique habitats encountered. In some cases such as Western Run, Crewes Channel and the upper Ni, low flow conditions had reduced available surface waters to one or more isolated pools or ponds. These sampling strategies were employed to maximize the likelihood of detecting as many different fish species as possible.

Captured fish were sorted by species and counted on adjacent streambank locations. In addition to the basic species inventory, the count data provides relative densities for each species at the time of sampling. Specimens were collected and preserved from each park as needed to aid in species identifications. All collected fish were initially fixed in formalin for at least 24 hours and then transferred to a 90% ethanol solution for long-term storage. This collection is located with the fish collection from Shenandoah National Park in the Natural Resources building at the Shenandoah National Park Headquarters. The species and origin of specimens are summarized in Appendix A.

## Results

A combined total of 21 sites along 16 streams were sampled during 2002 (Table 1). The total inventory effort at all of the sites, streams and parks combined resulted in a capture of 13,361 individual fish representing 59 species (Table 2). Species diversity and fish numbers encountered within each park were most influenced by the total number of streams and sites sampled or, in the case of APCO and BOWA, by stream size and the associated mix of different aquatic habitats represented within each.

### Fredericksburg & Spotsylvania National Military Park

Fredericksburg and Spotsylvania contained the greatest number of fish species (32) encountered within the five parks sampled during 2002. The large species count is the result of a number of small to medium sized streams stratified among several physiographic provinces with the distinct division among these occurring on either side of the Fall Zone. A total of six sites along five streams (Table 1) were sampled within FRSP from early August through early September. Species diversity ranged from a low of 6 on the small tributary of Deep Run to a high of 18 on Hazel Run, both of which are located in the upper Coastal Plain. Low flow conditions limited the sample site to a single large pool on the downstream side of Lee Drive. In contrast, Hazel Run was a medium sized stream with a fairly good rate of flow and the sample site was just over a mile upstream from the confluence with the Rappahannock River. The most commonly encountered species at FRSP as determined from the total numbers captured were pumpkinseed (*Lepomis gibbosus*), golden shiner (*Notemigonus crysoleucas*), bluespotted sunfish (*Enneacanthus gloriosus*), bluegill (*Lepomis macrochirus*), mud sunfish (*Acantharchus pomotis*), creek chubsucker (*Erimyzon oblongus*), brown bullhead (*Ameiurus nebulosus*), and bluehead chub (*Nocomis leptocephalus*) (Table 3). Fish species not detected in large numbers included rock bass (*Ambloplites rupestris*), rosyside dace (*Clinostomus funduloides*), longnose dace (*Rhinichthys cataractae*), yellow bullhead (*Ameiurus natalis*), sea lamprey (*Petromyzon marinus*), creek chub (*Semotilus atromaculatus*), and chain pickerel (*Esox niger*). The eastern silvery minnow (*Hybognathus regius*) was only encountered within Hazel Run at FRSP and was not otherwise detected within any of the other parks sampled during 2002. The combination of stream size and proximity of the sample site on Hazel Run to the Rappahannock River are likely contributors to the presence of this species at FRSP since silvery minnows prefer larger streams and frequent the tidal sections of Virginia's primary rivers.

### Richmond National Battlefield

Richmond also contained a variety of aquatic systems stratified over a fairly large area but was more severely impacted from drought and associated low flow conditions during 2002 than was FRSP. The five sites along five streams at RICH were sampled during mid August, resulting in the detection of 24 fish species (Table 4). Species diversity ranged from a low of three species in Bloody Run to a high of 17 species in Beaverdam Creek. Bloody Run is a very small stream with less than one meter widths and limited fish habitat in contrast to Beaverdam Creek which contains a wide and deep cut channel flowing from a forested landscape, through a broad marsh and then back through forest on its relatively short course to the confluence with the Chickahominy River. The most commonly encountered fish species at RICH included eastern

mudminnow (*Umbra pygmaea*), bluegill, eastern mosquitofish (*Gambusia holbrooki*), pirate perch (*Aphredoderus sayanus*), golden shiner and pumpkinseed. Fish species not detected in large numbers included swamp darter (*Etheostoma fusiforme*), ironcolor shiner (*Notropis chalybaeus*), margined madtom (*Noturus insignis*), rock bass, mud sunfish, rosyside dace and creek chub. One of the highlights of the fish inventory at RICH was the reconfirmation of the presence of ironcolor shiners in Beaverdam Creek. The original record there was from 1976 and represents the only known record of this species from the entire James Drainage. Other scattered populations of ironcolors exist elsewhere in the coastal plain of Virginia.

### **Petersburg National Battlefield**

The fish species diversity and numbers on the main unit of Petersburg Battlefield are limited by the small size and relative simplicity of available habitats within the two streams present. Reduced flow rates on both Harrison and Poor Creek may have further influenced the relative sparseness of the fish population inhabiting those two streams. Only eight species were detected from both of the streams combined (Table 5) and all but blacknose dace (*Rhinichthys atratulus*) were detected in fairly low numbers. One highlight was the detection of two lamprey species, least brook lamprey (*Lampetra aepyptera*) and the sea lamprey. PETE is the only one of the parks sampled during 2002 where both lamprey species were found, although sea lampreys likely occur within RICH as well. All of the lamprey encounters were from Harrison Creek.

### **Appomattox Court House**

The principal factor influencing fish species diversity within APCO is the presence of the upper reach of the Appomattox River and associated diversity of habitats available to fish. Although water flow rates were reduced due to drought conditions, there was adequate flow through shallow riffles combined with the presence of deep and in some cases, long pools. A total of 27 fish species were detected from three sample sites along the Appomattox River and one site along Plain Run Branch (Table 6.). All 27 species were found in the Appomattox River and of those, 14 species were encountered in the Plain Run Branch tributary. This was a surprising species diversity considering the relative small size combined with reduced flow rates of the stream. The most frequently encountered fish at APCO during 2002 included common shiner, mountain redbelly dace (*Phoxinus oreas*), bluehead chub, johnny darter (*Etheostoma nigrum*), redbreast sunfish (*Lepomis auritus*), central stoneroller (*Camptostoma anomalum*), white sucker (*Catostomus commersonii*) and creek chubsucker. Fish species not detected in large numbers included northern hogsucker (*Hypentelium nigricans*), bluntnose minnow (*Pimephales notatus*), longnose dace, fallfish (*Semotilus corporalis*), and smallmouth bass (*Micropterus dolomieu*). One of the highlights from the Appomattox River inventory was the diversity and density of darters encountered there. Four darter species including the fantail (*Etheostoma flabellare*), longfin (*Etheostoma longimanum*), johnny and stripeback (*Percina notogramma*) were found together in sample sections adjacent to and east of SR 24. The entire Appomattox River system is considered problematic in terms of separating johnny darters from a close relative and nearly identical appearing but separate species, the tessellated darter (*Etheostoma olmstedii*). The two species within the Appomattox River system consist of integrated, hybrid and/or differentiated fish (Jenkins and Burkhead, 1994). Of four fish collected from the Appomattox River, all were confirmed as johnny darters by Dr. Robert Jenkins of Roanoke College.

## **Booker T. Washington National Monument**

The relatively large size of Gills Creek, the diversity of fish habitats encountered and the proximity to a large reservoir (Smith Mountain Lake) located several miles downstream, were all principal factors in both fish species diversity and the relative densities of certain species encountered within BOWA. Due to the park's location within the Roanoke Drainage, there was an entire suite of species present within the streams of BOWA that were not found in any of the Chesapeake Bay Drainage parks. A total of 28 fish species (Table 7) were detected from one long (approx. 400 meter) transect in Gills Creek and from three relatively short (25 – 100m) transects within Jack-O-Lantern Branch. All 28 species were found in Gills Creek and of those, 8 species were encountered within Jack-O-Lantern Branch. The most frequently encountered species at BOWA during 2002 included bluehead chub, redbreast sunfish, crescent shiner (*Luxilus cerasinus*), rosefin shiner (*Lythrurus ardens*), and satinfin shiner (*Cyprinella analostana*) within Gills Creek and rosieside dace and mountain redbelly dace within Jack-O-Lantern Branch. Fish species not detected in large numbers within either stream included golden redhorse (*Moxostoma erythrurum*), johnny darter, swallowtail shiner (*Notropis procne*), pumpkinseed, white shiner (*Luxilus albeolus*), bluntnose minnow and spottail shiner (*Notropis hudsonius*). During the spring spawning season, there are likely times when large numbers of large adult redhorse suckers are present within the reach of Gills Creek at BOWA. All of the individuals representing the redhorse group encountered during the August sampling effort were juveniles. Roanoke Drainage endemic species encountered within BOWA that are not generally known to occur within the Chesapeake Bay Drainages included Roanoke hogsucker (*Hypentelium roanokense*), white shiner, crescent shiner, and riverweed darter (*Etheostoma podostemone*). An additional suite of fish species encountered within BOWA including quillback (*Carpionodes cyprinus*), golden redhorse, V-lip redhorse (*Moxostoma pappilosum*), black jumprock (*Scartomyzon cervinus*) and spottail shiner also occur within some of the major Chesapeake Bay drainages but were not found in any of the other parks sampled during 2002.

## **Data Management**

During the course of the inventory, a project specific database was created as a medium for data entry, storage and ultimately distribution to the individual parks. The data were entered and verified according to the data management standards established in Atkinson (2003). These data were distributed to the individual parks in December, 2002. Concurrently, the data was submitted in NPSpecies format to the regional coordinator for addition to the NPSpecies database.

## **Discussion and Management Recommendations**

With the exception of some of the Centrarchid species, the fish encountered in the five parks sampled during 2002 were native species, none of which are listed or otherwise special category (candidate) species. Of the Centrarchids found in Atlantic Slope drainages within Virginia, rock bass, white crappie (*Pomoxis annularis*), smallmouth bass, largemouth bass (*Micropterus salmoides*), and green sunfish (*Lepomis cyanellus*), have all been introduced and are therefore outside of their original native range. All are now considered as naturalized species and generally accepted as components of the native fish fauna. Warmouth (*Lepomis gulosus*) are

considered native to the James Drainage but were probably introduced to the York and Rappahannock Drainages (Jenkins and Burkhead, 1994).

Rock bass are considered native to the Tennessee and Big Sandy Drainages within Virginia, all other Virginia populations having been introduced. This is also true for populations of largemouth and smallmouth bass. The original native range of the green sunfish included the Tennessee, Big Sandy and New Drainages within Virginia, all other populations having been introduced. Populations of redbreast sunfish, pumpkinseed, bluegill, mud sunfish, bluespotted sunfish, and flier (*Centrarchus macropterus*) are the original native Centrarchid species within the Atlantic Slope drainages of Virginia.

The principal management issues that may impact water quality and/or fish populations within these streams or aquatic systems are potential affects from activities associated with development, agriculture or other disturbances upstream of the parks. Most, if not all of the aquatic systems associated with the parks included in the 2002 inventory, originate on private, municipal or other lands upstream of each park or park unit. While it is generally acknowledged that every aquatic system within Atlantic Slope drainages in Virginia have been somewhat degraded from pre- colonial conditions, the primary challenge will be to limit future degradations in an attempt to preserve and/or restore water quality and associated fish species assemblages. Where feasible, park staff should encourage programs and projects that result in improved water quality in areas upstream of individual parks or park units.

Although fish population monitoring could be implemented on a number of the streams that were a part of the 2002 inventory, several streams including Hazel Run (FRSP), Harrison Creek and Poor Creek (PETE), the Appomattox River and Plain Run Branch (APCO) and Gills Creek (BOWA) would be particularly well suited for fisheries monitoring due to the clarity of the water (typically associated with higher flow rates), firmness of substrates within the streambeds, possession of fairly well defined streambanks, and being generally accessible with backpack electrofishing gear. In contrast, streams that would be fairly difficult to implement fisheries monitoring in include those that have high turbidity, deep cut channels (beyond typical wading depths) and muck, mud or other substrates that would reduce the mobility of a crew and significantly contribute to the turbidity at the site.

### **Recommendations for Improving/Altering the Program or Project in Future Years**

Some stream sites within individual parks sampled were either incompletely sampled or were not sampled at all. Two sites at Richmond (Beaverdam Creek and Crewes Channel) were sampled during low flow conditions with backpack electrofishing gear but a more thorough and better representative sample will be conducted with the use of a boat mounted shocker. This was particularly the case in the lower reach of Beaverdam Creek where a wide and deep cut channel exists which likely contains substantially more fish than were captured with the backpack units. Additionally, the backpack survey of Beaverdam Creek was terminated within an aquatic transition zone approximately 100m upstream from the starting point. During subsequent examinations of some of the fish specimens collected from that zone, it was apparent that the area upstream contained a slightly different fish community in terms of the species captured than had been encountered elsewhere within the battlefield. The backpack survey will



be extended further upstream during 2003 to more extensively inventory this area. Crewes Channel will also be sampled by boat during a period of higher flow to obtain a more thorough inventory of that system. The use of a small electrofishing boat at Richmond will be coordinated with the Ashland Area Office of the Virginia Department of Game and Inland Fisheries.

The section of Hatcher Run that flows through the Five Forks Unit of Petersburg Battlefield consists largely of a pond approximately 4 acres in size. The area was assessed but not sampled during 2002. This site will also be more efficiently sampled from a small electrofishing boat which will be conducted during 2003 in coordination with the Farmville Area Office of the Virginia Department of Game and Inland Fisheries. The location of this site within the Chowan Drainage which flows into Albemarle Sound in North Carolina, should dramatically contribute to the list of fish species associated with Petersburg Battlefield.

### **Literature Cited**

Atkinson, J. B. 2003. Shenandoah National Park Fisheries Monitoring Protocol. 63 pp.

Jenkins, R.E., and N.M. Burkhead. 1993. Freshwater fishes of Virginia. American Fisheries Society, Bethesda, Maryland. 1079 pp.

## **Tables and Figures**

Table 1. Streams Sampled within Five Virginia Parks during 2002.

Park Code	Park	Stream Codes	Stream Name	Total Sites
APCO	Appomattox Court House National Historical Park	APPX	Appomattox River	3
APCO	Appomattox Court House National Historical Park	PRBR	Plain Run Branch	1
BOWA	Booker T Washington National Monument	GILL	Gills Creek	1
BOWA	Booker T Washington National Monument	JOLB	Jack-O-Lantern Branch	3
FRSP	Fredericksburg & Spotsylvania National Military Park	DEEP	Deep Run	1
FRSP	Fredericksburg & Spotsylvania National Military Park	HAZL	Hazel Run	1
FRSP	Fredericksburg & Spotsylvania National Military Park	LEWR	Lewis Run	1
FRSP	Fredericksburg & Spotsylvania National Military Park	NIRI	Ni River Tributary	1
FRSP	Fredericksburg & Spotsylvania National Military Park	WILD	Wilderness Run	2
PETE	Petersburg National Battlefield	HARR	Harrison Creek	1
PETE	Petersburg National Battlefield	POOR	Poor Creek	1
RICH	Richmond National Battlefield Park	BEAV	Beaverdam Creek	1
RICH	Richmond National Battlefield Park	BLDR	Bloody Run	1
RICH	Richmond National Battlefield Park	BOAT	Boatswain Creek	1
RICH	Richmond National Battlefield Park	CREW	Crewes Channel	1
RICH	Richmond National Battlefield Park	WEST	Western Run	1

Table 2. Fish Species Inventory and Capture Totals by Park during 2002

FAMILY	COMMON NAME	GENUS/SPECIES	APCO	BOWA	FRSP	PETE	RICH	Total
Anguillidae	Eel, American	Anguilla rostrata	0	0	94	3	29	126
Aphredoderidae	Perch, Pirate	Aphredoderus sayanus	87	0	147	0	124	358
Catostomidae	Chubsucker, Creek	Erimyzon oblongus	105	0	198	29	47	379
Catostomidae	Hogsucker, Roanoke	Hypentelium roanokense	0	10	0	0	0	10
Catostomidae	Jumprock, Black	Scartomyzon cervinus	0	60	0	0	0	60
Catostomidae	Quillback	Carpionodes cyprinus	0	39	0	0	0	39
Catostomidae	Redhorse, Golden	Moxostoma erythrurum	0	1	0	0	0	1
Catostomidae	Redhorse, V-lip	Moxostoma pappillosum	0	21	0	0	0	21
Catostomidae	Hogsucker, Northern	Hypentelium nigricans	1	14	0	0	0	15
Catostomidae	Sucker, Torrent	Moxostoma rhothoecum	82	0	0	0	0	82
Catostomidae	Sucker, White	Catostomus commersonii	115	10	65	0	0	190
Centrarchidae	Bass, Largemouth	Micropterus salmoides	0	31	33	0	13	77
Centrarchidae	Bass, Rock	Ambloplites rupestris	0	0	1	0	4	5
Centrarchidae	Bass, Smallmouth	Micropterus dolomieu	4	0	0	0	0	4
Centrarchidae	Bluegill	Lepomis macrochirus	20	37	673	0	303	1033
Centrarchidae	Crappie, White	Pomoxis annularis	0	0	91	0	16	107
Centrarchidae	Flier	Centrarchus macropterus	0	0	0	0	41	41
Centrarchidae	Pumpkinseed	Lepomis gibbosus	38	4	1677	0	61	1780
Centrarchidae	Sunfish, Bluespotted	Enneacanthus gloriosus	0	0	757	0	39	796
Centrarchidae	Sunfish, Green	Lepomis cyanellus	0	6	49	0	0	55
Centrarchidae	Sunfish, Mud	Acantharchus pomotis	0	0	432	0	5	437
Centrarchidae	Sunfish, Redbreast	Lepomis auritus	130	346	50	0	11	537
Centrarchidae	Warmouth	Lepomis gulosus	0	0	14	0	33	47
Cyprinidae	Chub, Bluehead	Nocomis leptcephalus	229	901	162	0	0	1292
Cyprinidae	Chub, Creek	Semotilus atromaculatus	69	66	5	18	8	166
Cyprinidae	Dace, Blacknose	Rhinichthys atratulus	54	0	148	207	0	409
Cyprinidae	Dace, Longnose	Rhinichthys cataractae	3	0	3	0	0	6
Cyprinidae	Dace, Mountain Redbelly	Phoxinus phoxinus	235	119	0	0	0	354
Cyprinidae	Dace, Rosyside	Clinostomus funduloides	80	142	1	64	7	294
Cyprinidae	Fallfish	Semotilus corporalis	4	0	105	0	0	109
Cyprinidae	Minnow, Bluntnose	Pimephales notatus	1	6	0	0	0	7

Table 2 Continued. Fish Species Inventory and Capture Totals by Park during 2002

FAMILY	COMMON NAME	GENUS/SPECIES	APCO	BOWA	FRSP	PETE	RICH	Total
Cyprinidae	Minnow, Cutlip	Exoglossum maxillingua	21	0	0	0	0	21
Cyprinidae	Minnow, Eastern Silvery	Hybognathus regius	0	0	40	0	0	40
Cyprinidae	Shiner, Common	Luxilus cornutus	435	0	80	0	0	515
Cyprinidae	Shiner, Crescent	Luxilus cerasinus	0	330	0	0	0	330
Cyprinidae	Shiner, Golden	Notemigonus crysoleucas	0	0	1376	0	70	1446
Cyprinidae	Shiner, Ironcolor	Notropis chalybaeus	0	0	0	0	2	2
Cyprinidae	Shiner, Rosefin	Lythrurus ardens	92	241	0	0	0	333
Cyprinidae	Shiner, Satinfin	Cyprinella analostana	0	115	32	0	0	147
Cyprinidae	Shiner, Spottail	Notropis hudsonius	0	9	0	0	0	9
Cyprinidae	Shiner, Swallowtail	Notropis procne	64	4	11	0	0	79
Cyprinidae	Shiner, White	Luxilus albeolus	0	5	0	0	0	5
Cyprinidae	Stoneroller, Central	Campostoma anomalum	119	77	0	0	0	196
Esocidae	Pickeral, Chain	Esox niger	0	0	12	0	49	61
Ictaluridae	Bullhead, Brown	Ameiurus nebulosus	0	0	181	0	0	181
Ictaluridae	Bullhead, Yellow	Ameiurus natalis	0	0	3	0	14	17
Ictaluridae	Madtom, Margined	Noturus insignis	10	47	0	0	3	60
Percidae	Darter, Fantail	Etheostoma flabellare	19	22	0	0	0	41
Percidae	Darter, Johnny	Etheostoma nigrum	173	3	0	0	0	176
Percidae	Darter, Longfin	Etheostoma longimanum	12	0	0	0	0	12
Percidae	Darter, Riverweed	Etheostoma podostemone	0	22	0	0	0	22
Percidae	Darter, Stripeback	Percina notogramma	17	0	0	0	0	17
Percidae	Darter, Swamp	Etheostoma fusiforme	0	0	0	0	1	1
Percidae	Darter, Tessellated	Etheostoma olmsted	0	0	22	0	0	22
Petromyzontidae	Lamprey, Least Brook	Lampetra aepyptera	0	0	0	4	13	17
Petromyzontidae	Lamprey, Sea	Petromyzon marinus	0	0	3	2	0	5
Poeciliidae	Mosquitofish, Eastern	Gambusia holbrooki	0	0	122	79	176	377
Umbridae	Mudminnow, Eastern	Umbra pygmaea	0	0	87	0	305	392
			2219	2688	6674	406	1374	13361

**Table 3. Fish Species Inventory and Capture Totals from Fredericksburg and Spotsylvania NMP in 2002.**

COMMON NAME	GENUS/SPECIES	DEEP	HAZL	LEWR	NIRI	WILD	TOTALS
Eel, American	Anguilla rostrata	1	85	0	7	1	94
Perch, Pirate	Aphredoderus sayanus	0	0	2	145	0	147
Sucker, White	Catostomus commersonii	1	60	0	0	4	65
Chubsucker, Creek	Erimyzon oblongus	20	0	6	159	13	198
Sunfish, Mud	Acantharchus pomotis	0	0	0	432	0	432
Bass, Rock	Ambloplites rupestris	0	1	0	0	0	1
Sunfish, Bluespotted	Enneacanthus gloriosus	0	0	1	756	0	757
Sunfish, Redbreast	Lepomis auritus	0	27	7	0	16	50
Sunfish, Green	Lepomis cyanellus	0	0	0	5	44	49
Pumpkinseed	Lepomis gibbosus	1	0	8	1655	13	1677
Warmouth	Lepomis gulosus	0	0	3	0	11	14
Bluegill	Lepomis macrochirus	0	12	33	10	618	673
Bass, Largemouth	Micropterus salmoides	0	25	1	0	7	33
Crappie, White	Pomoxis annularis	0	0	0	0	91	91
Dace, Rosyside	Clinostomus funduloides	0	0	0	1	0	1
Shiner, Satinfish	Cyprinella analostana	0	32	0	0	0	32
Minnow, Eastern Silvery	Hybognathus regius	0	40	0	0	0	40
Shiner, Common	Luxilus cornutus	0	80	0	0	0	80
Chub, Bluehead	Nocomis leptocephalus	0	162	0	0	0	162
Shiner, Golden	Notemigonus crysoleucas	0	0	18	1274	84	1376
Shiner, Swallowtail	Notropis procne	0	9	0	0	2	11
Dace, Blacknose	Rhinichthys atratulus	147	1	0	0	0	148
Dace, Longnose	Rhinichthys cataractae	0	3	0	0	0	3
Chub, Creek	Semotilus atromaculatus	2	3	0	0	0	5
Fallfish	Semotilus corporalis	0	105	0	0	0	105
Pickeral, Chain	Esox niger	0	0	11	1	0	12
Bullhead, Yellow	Ameiurus natalis	0	0	1	0	2	3
Bullhead, Brown	Ameiurus nebulosus	0	0	0	180	1	181
Darter, Tessellated	Etheostoma olmstedii	0	19	1	0	2	22
Lamprey, Sea	Petromyzon marinus	0	3	0	0	0	3
Mosquitofish, Eastern	Gambusia holbrooki	0	15	0	0	107	122
Mudminnow, Eastern	Umbra pygmaea	0	0	0	87	0	87
		172	682	92	4712	1016	6674

Table 4. Fish Species Inventory and Capture Totals from Richmond National Battlefield in 2002.

FAMILY	COMMON NAME	GENUS/SPECIES	BEAV	BOAT	BLDR	WEST	CREW	TOTALS
Anguillidae	Eel, American	Anguilla rostrata	14	0	0	1	14	29
Aphredoderidae	Perch, Pirate	Aphredoderus sayanus	9	65	2	48	0	124
Catostomidae	Chubsucker, Creek	Erimyzon oblongus	30	0	0	17	0	47
Centrarchidae	Sunfish, Mud	Acantharchus pomotis	0	5	0	0	0	5
Centrarchidae	Bass, Rock	Ambloplites rupestris	4	0	0	0	0	4
Centrarchidae	Flier	Centrarchus macropterus	0	0	0	0	41	41
Centrarchidae	Sunfish, Bluespotted	Enneacanthus gloriosus	21	13	0	5	0	39
Centrarchidae	Sunfish, Redbreast	Lepomis auritus	7	0	0	0	4	11
Centrarchidae	Pumpkinseed	Lepomis gibbosus	3	0	0	0	58	61
Centrarchidae	Warmouth	Lepomis gulosus	0	7	0	16	10	33
Centrarchidae	Bluegill	Lepomis macrochirus	35	125	0	1	142	303
Centrarchidae	Bass, Largemouth	Micropterus salmoides	12	1	0	0	0	13
Centrarchidae	Crappie, White	Pomoxis annularis	0	0	0	0	16	16
Cyprinidae	Dace, Rosyside	Clinostomus funduloides	0	0	0	7	0	7
Cyprinidae	Shiner, Golden	Notemigonus crysoleucas	8	0	0	57	5	70
Cyprinidae	Shiner, Ironcolor	Notropis chalybaeus	2	0	0	0	0	2
Cyprinidae	Chub, Creek	Semotilus atromaculatus	0	0	0	8	0	8
Esocidae	Pickeral, Chain	Esox niger	45	4	0	0	0	49
Ictaluridae	Bullhead, Yellow	Ameiurus natalis	4	3	0	5	2	14
Ictaluridae	Madtom, Margined	Noturus insignis	2	0	0	1	0	3
Percidae	Darter, Swamp	Etheostoma fusiforme	1	0	0	0	0	1
Petromyzontidae	Lamprey, Least Brook	Lampetra aepyptera	6	0	3	0	4	13
Poeciliidae	Mosquitofish, Eastern	Gambusia holbrooki	0	135	0	41	0	176
Umbridae	Mudminnow, Eastern	Umbra pygmaea	5	293	4	3	0	305
			208	651	9	210	296	1374

Table 5. Fish Species Inventory and Capture Totals from Petersburg National Battlefield in 2002.

FAMILY	COMMON NAME	GENUS/SPECIES	HARR	POOR	TOTALS
Anguillidae	Eel, American	Anguilla rostrata	3	0	3
Catostomidae	Chubsucker, Creek	Erimyzon oblongus	29	0	29
Cyprinidae	Dace, Rosyside	Clinostomus funduloides	64	0	64
Cyprinidae	Dace, Blacknose	Rhinichthys atratulus	207	0	207
Cyprinidae	Chub, Creek	Semotilus atromaculatus	12	6	18
Petromyzontidae	Lamprey, Least Brook	Lampetra aepyptera	4	0	4
Petromyzontidae	Lamprey, Sea	Petromyzon marinus	2	0	2
Poeciliidae	Mosquitofish, Eastern	Gambusia holbrooki	0	79	79
			321	85	406



Table 6. Fish Species Inventory and Capture Totals from Appomattox Court House NHP in 2002.

FAMILY	COMMON NAME	GENUS/SPECIES	APPX	PRBR	TOTALS
Aphredoderidae	Perch, Pirate	Aphredoderus sayanus	64	23	87
Catostomidae	Sucker, White	Catostomus commersonii	114	1	115
Catostomidae	Chubsucker, Creek	Erimyzon oblongus	105	0	105
Catostomidae	Hogsucker, Northern	Hypentelium nigricans	1	0	1
Catostomidae	Sucker, Torrent	Moxostoma rhothoecum	70	12	82
Centrarchidae	Sunfish, Redbreast	Lepomis auritus	130	0	130
Centrarchidae	Pumpkinseed	Lepomis gibbosus	32	6	38
Centrarchidae	Bluegill	Lepomis macrochirus	20	0	20
Centrarchidae	Bass, Smallmouth	Micropterus dolomieu	4	0	4
Cyprinidae	Stoneroller, Central	Campostoma anomalum	113	6	119
Cyprinidae	Dace, Rosyside	Clinostomus funduloides	28	52	80
Cyprinidae	Minnow, Cutlips	Exoglossum maxillingua	21	0	21
Cyprinidae	Shiner, Common	Luxilus cornutus	427	8	435
Cyprinidae	Shiner, Rosefin	Lythrurus ardens	92	0	92
Cyprinidae	Chub, Bluehead	Nocomis leptcephalus	202	27	229
Cyprinidae	Shiner, Swallowtail	Notropis procne	64	0	64
Cyprinidae	Dace, Mountain Redbelly	Phoxinus oreas	136	99	235
Cyprinidae	Minnow, Bluntnose	Pimephales notatus	1	0	1
Cyprinidae	Dace, Blacknose	Rhinichthys atratulus	9	45	54
Cyprinidae	Dace, Longnose	Rhinichthys cataractae	3	0	3
Cyprinidae	Chub, Creek	Semotilus atromaculatus	27	42	69
Cyprinidae	Fallfish	Semotilus corporalis	4	0	4
Ictaluridae	Madtom, Margined	Noturus insignis	10	0	10
Percidae	Darter, Fantail	Etheostoma flabellare	15	4	19
Percidae	Darter, Longfin	Etheostoma longimanum	12	0	12
Percidae	Darter, Johnny	Etheostoma nigrum	162	11	173
Percidae	Darter, Stripeback	Percina notogramma	16	1	17
			1882	337	2219

Table 7. Fish Species Inventory and Capture Totals from Booker T. Washington National Monument in 2002.

FAMILY	COMMON NAME	GENUS/SPECIES	GILL	JOLB	TOTALS
Catostomidae	Quillback	<i>Cariodes cyprinus</i>	39	0	39
Catostomidae	Sucker, White	<i>Catostomus commersonii</i>	10	0	10
Catostomidae	Hogsucker, Northern	<i>Hypentelium nigricans</i>	14	0	14
Catostomidae	Hogsucker, Roanoke	<i>Hypentelium roanokense</i>	10	0	10
Catostomidae	Redhorse, Golden	<i>Moxostoma erythrurum</i>	1	0	1
Catostomidae	Redhorse, V-lip	<i>Moxostoma pappillosum</i>	21	0	21
Catostomidae	Jumprock, Black	<i>Scartomyzon cervinus</i>	60	0	60
Centrarchidae	Sunfish, Redbreast	<i>Lepomis auritus</i>	339	7	346
Centrarchidae	Sunfish, Green	<i>Lepomis cyanellus</i>	6	0	6
Centrarchidae	Pumpkinseed	<i>Lepomis gibbosus</i>	4	0	4
Centrarchidae	Bluegill	<i>Lepomis macrochirus</i>	37	0	37
Centrarchidae	Bass, Largemouth	<i>Micropterus salmoides</i>	31	0	31
Cyprinidae	Stoneroller, Central	<i>Campostoma anomalum</i>	77	0	77
Cyprinidae	Dace, Rosyside	<i>Clinostomus funduloides</i>	4	138	142
Cyprinidae	Shiner, Satinfish	<i>Cyprinella analostana</i>	115	0	115
Cyprinidae	Shiner, White	<i>Luxilus albeolus</i>	5	0	5
Cyprinidae	Shiner, Crescent	<i>Luxilus cerasinus</i>	327	3	330
Cyprinidae	Shiner, Rosefin	<i>Lythrurus ardens</i>	241	0	241
Cyprinidae	Chub, Bluehead	<i>Nocomis leptcephalus</i>	874	27	901
Cyprinidae	Shiner, Spottail	<i>Notropis hudsonius</i>	9	0	9
Cyprinidae	Shiner, Swallowtail	<i>Notropis procne</i>	4	0	4
Cyprinidae	Dace, Mountain Redbelly	<i>Phoxinus oreas</i>	1	118	119
Cyprinidae	Minnow, Bluntnose	<i>Pimephales notatus</i>	6	0	6
Cyprinidae	Chub, Creek	<i>Semotilus atromaculatus</i>	5	61	66
Ictaluridae	Madtom, Margined	<i>Noturus insignis</i>	47	0	47
Percidae	Darter, Fantail	<i>Etheostoma flabellare</i>	19	3	22
Percidae	Darter, Johnny	<i>Etheostoma nigrum</i>	3	0	3
Percidae	Darter, Riverweed	<i>Etheostoma podostemone</i>	16	6	22
			2325	363	2688

## Maps

# Virginia Parks Fish Inventory Mid-Atlantic Network 2002



APCO-Appomattox Court House  
National Historical Park  
BOWA-Booker T. Washington  
National Monument  
FRSP-Fredericksburg & Spotsylvania  
National Military Park  
PETE-Petersburg National Battlefield  
RICH-Richmond National Battlefield

SITEID: FRSP01

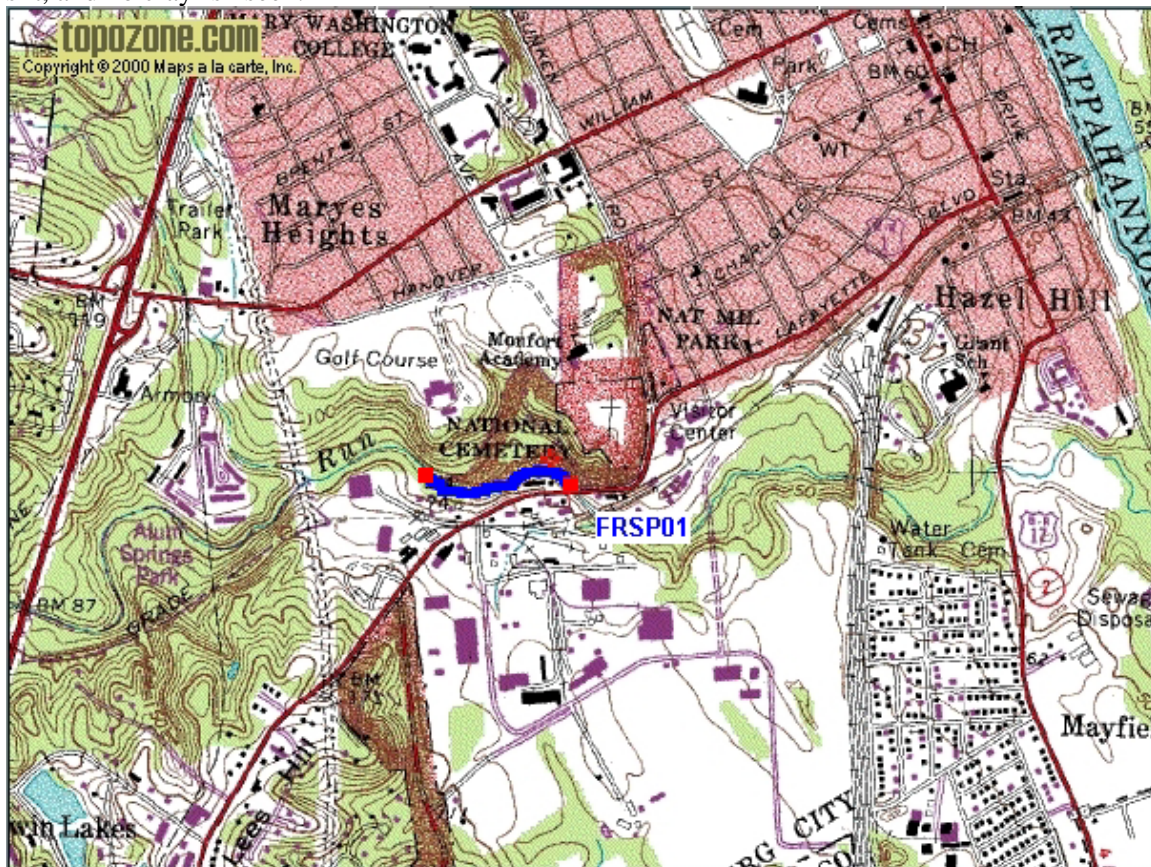
Description: Hazel\_Run, FRSP, Fredericksburg & Spotsylvania National Military Park, VA

AreaName: Hazel Run

EventDate: 8/7/2002

Notes: Fredericksburg, VA - Bridge to upper boundary.

Lower section in well shaded, middle and upper sections fairly open, Much Japanese knotweed shading the stream. Stream is heavily influenced by man and is riprapped most of the full length of the road side(Rt. 1). Beaver activity. Substrate is mainly pebble gravel and sand with riprap and cobble, lots of silt, and no crayfish seen.





SITEID: FRSP02

Description: Deep Run, FRSP, Fredericksburg & Spotsylvania National Military Park, VA

AreaName: Deep Run

EventDate: 8/7/2002

Notes: Shocked from 20 meters below weir to bridge. 100% canopy; Substrate composed of fist sized cobble and pebble gravel larger cobble at bridge.



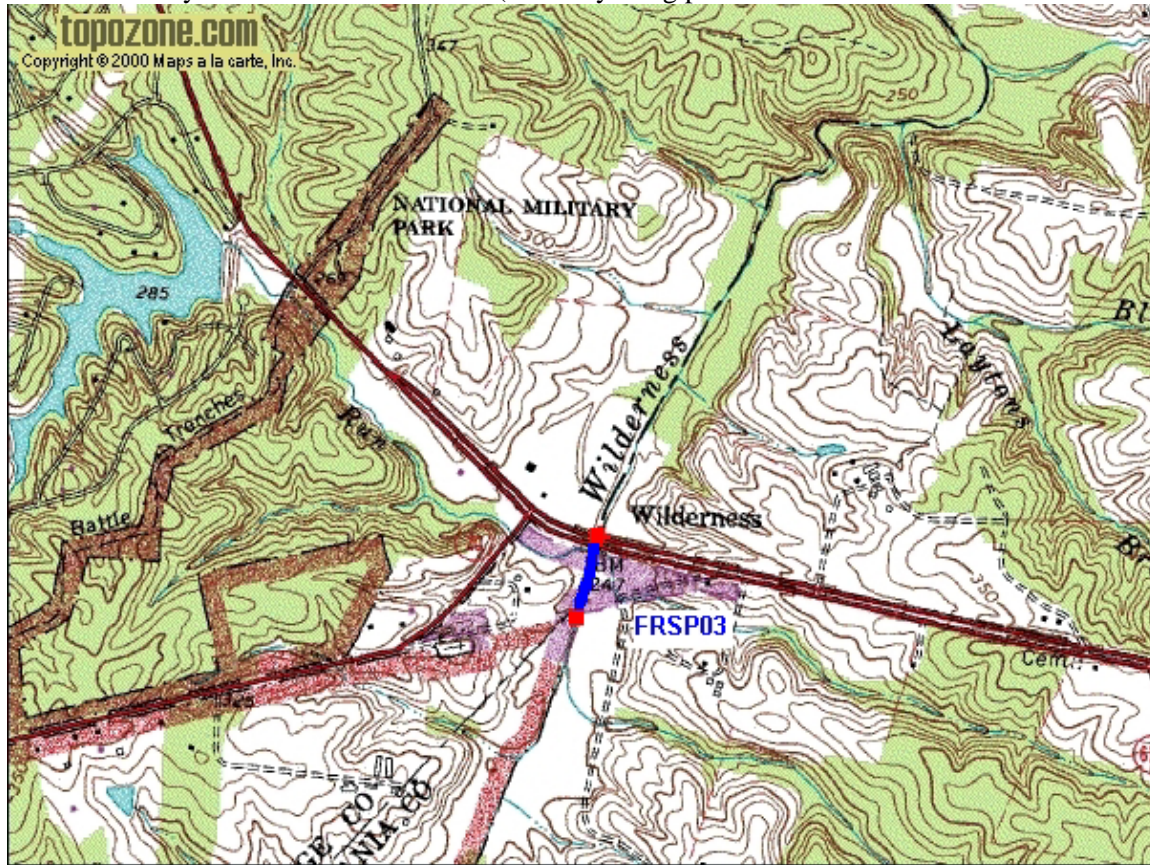
SITEID: FRSP03

Description: Wilderness\_Run, FRSP, Fredericksburg & Spotsylvania National Military Park, VA

AreaName: Wilderness Run

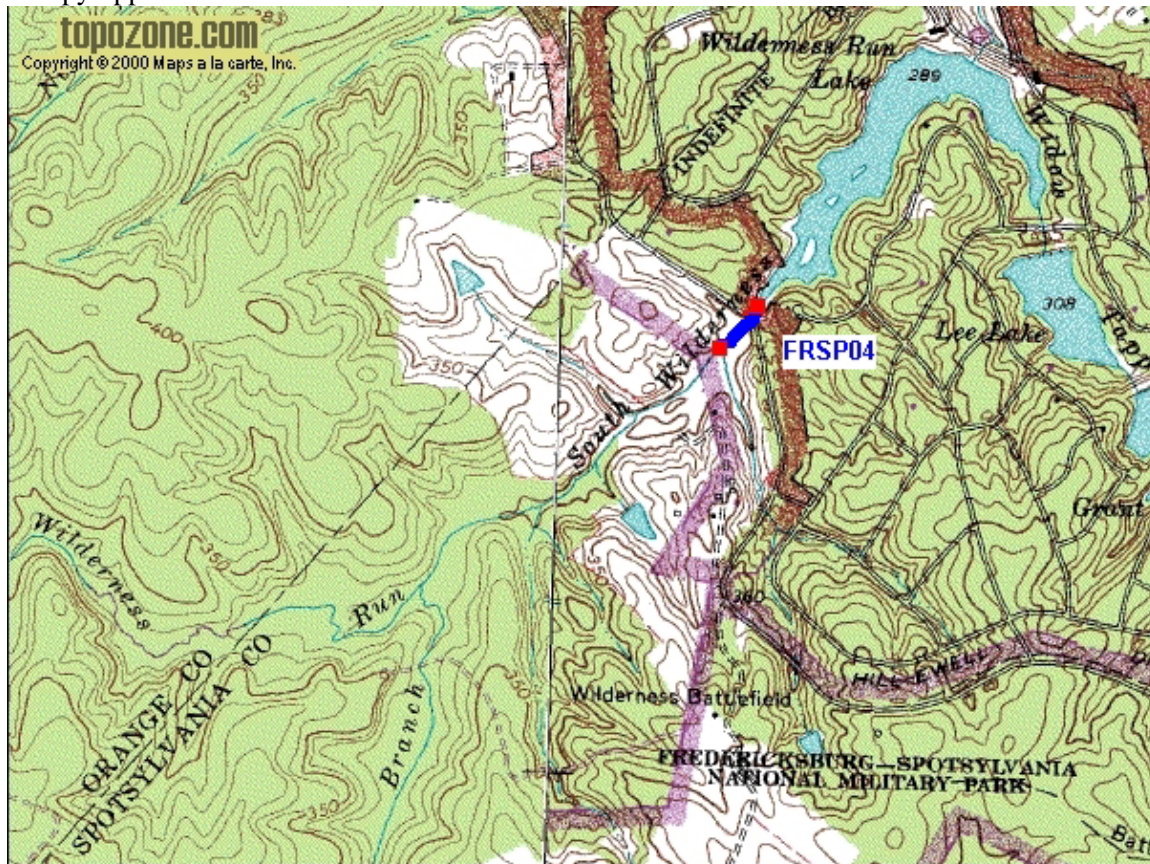
EventDate: 8/8/2002

Notes: Wilderness Run from Rt. 3 culvert to point approx. 120 meters upstream. There was no flow due to drought conditions. Very silty, approx. 100% riparian cover, some small cobble spots but not much channel was dry for 10 out of 120 meters (basically 2 big pools).





SITEID: FRSP04  
Description: Wilderness\_Run Upper, FRSP, Fredericksburg & Spotsylvania National Military Park, VA  
AreaName: Wilderness Run  
EventDate: 8/8/2002  
Notes: Located off of Hill Ewell Drive approx. 90 meters of flooded stream channel. Lower half no canopy upper half 80-100% cover silt bottom.





SITEID: FRSP05

Description: Ni\_River\_Trib, FRSP, Fredericksburg & Spotsylvania National Military Park, VA

AreaName: Ni River Tributary

EventDate: 8/26/2002

Notes: First beaver pond downstream from tour road (Ni River Drainage). Beaver pond was about 2 feet low and some sections were just over waist deep area shocked was approx. 8 meters by 40 meters. No tree canopy and bottom was composed mainly of detritus and silt. We shocked on J2, 800 volts for approx. 20 minutes.





SITEID: FRSP06

Description: Lewis' Run, FRSP, Fredericksburg & Spotsylvania National Military Park, VA

AreaName: Lewis Run

EventDate: 9/3/2002

Notes: Site is located at the second Lewis' Run bridge from the Wilderness Visitor Center on the battlefield tour route. It starts at the upstream side of the bridge and goes upstream approx. 175 meters (to the second riffle.) Stream is murky with a silt and clay bottom. The average depth is about 0.60 meters and the reach has about 85% canopy.





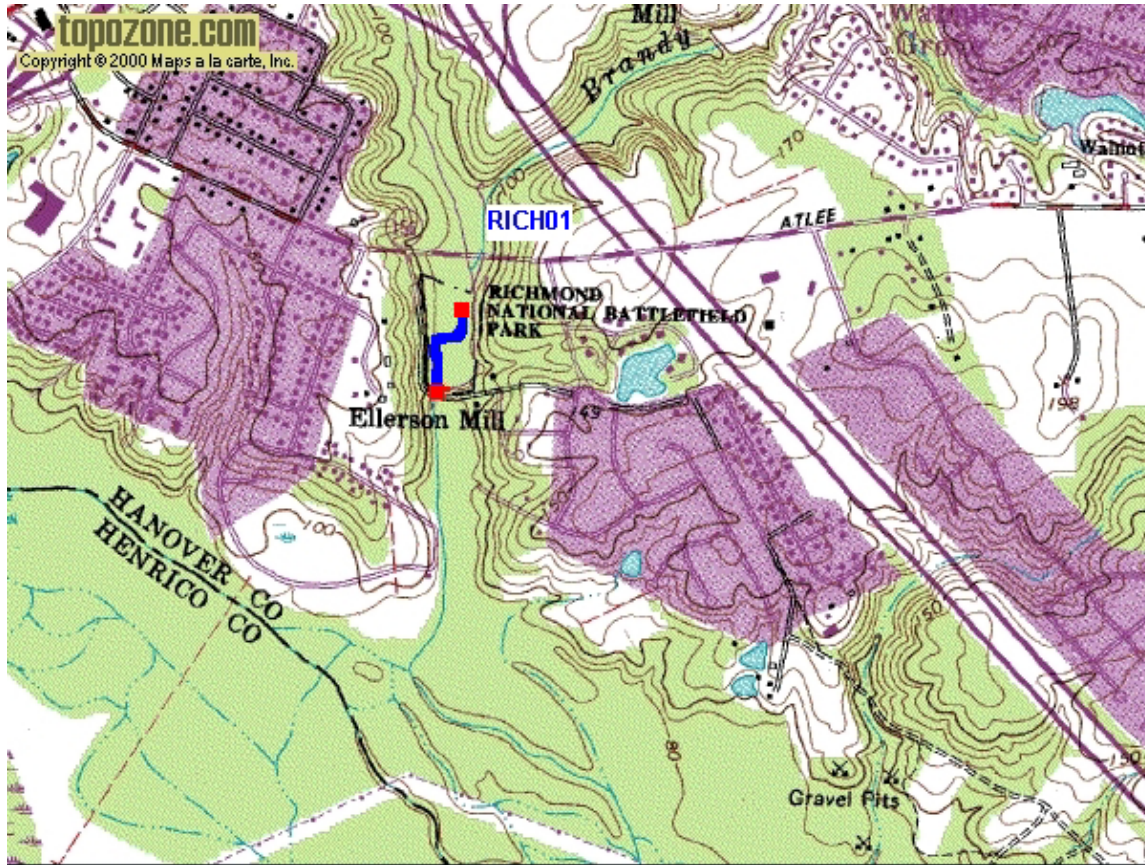
SITEID: RICH01

Description: Beaverdam\_Creek, RICH, Richmond National Battlefield Park, VA

AreaName: Beaverdam Creek

EventDate: 8/20/2002

Notes: site is mostly open but is deep well over chest waders even with the water down 1.5 feet. Appox. Ten meters wide at start and the creek is about two meters wide



SITEID: RICH02

Description: Boatswain\_Creek, RICH, Richmond National Battlefield Park, VA

AreaName: Boatswain Creek

EventDate: 8/20/2002

Notes: Started, 50 meters below beaver pond at the Alabama monument and shocked to the top of the beaver pond. About 50% canopy some recent beaver activity





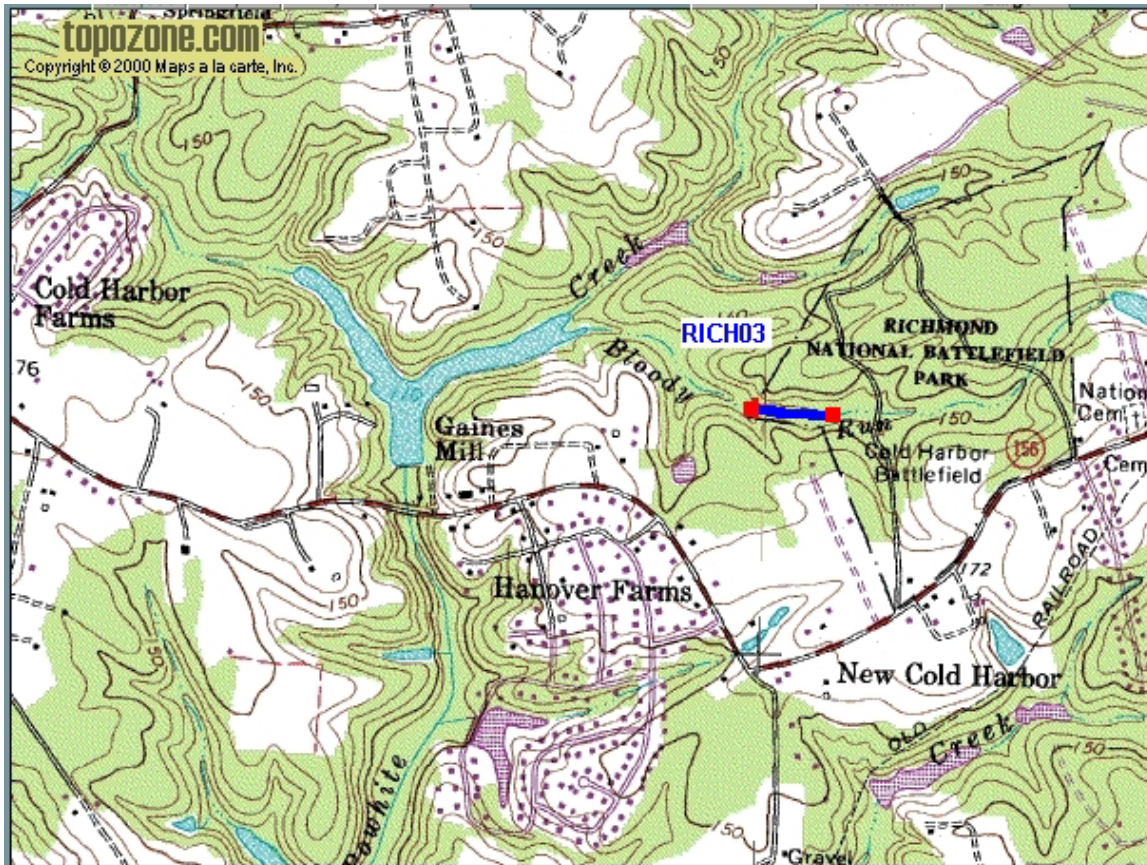
SITEID: RICH03

Description: Bloody\_Run, RICH, Richmond National Battlefield Park, VA

AreaName: Bloody Run

EventDate: 8/20/2002

Notes: Cold Harbor unit - Bloody Run. Located where the trail meets the lower boundary the first time time. Site is approx., 50 meters. Site is 100% canopy and has some deep pools sand/silt bottom about 2 feet wide.



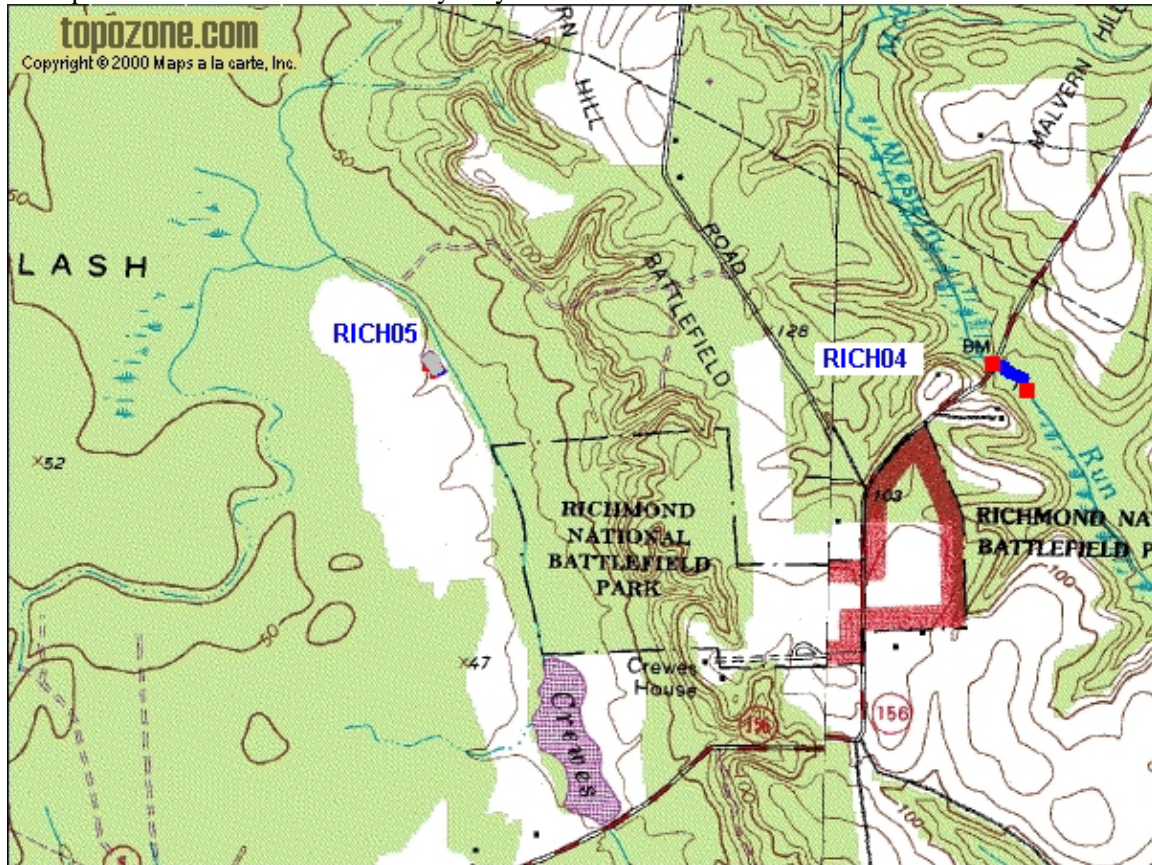
SITEID: RICH04

Description: Western\_Run, RICH, Richmond National Battlefield Park, VA

AreaName: Western Run

EventDate: 8/20/2002

Notes: Located below state route 156?. Section is approx. 50 meters long, as the stream was dry for the most part. 80-90% shaded but is very silty stream is about 3 meters wide.





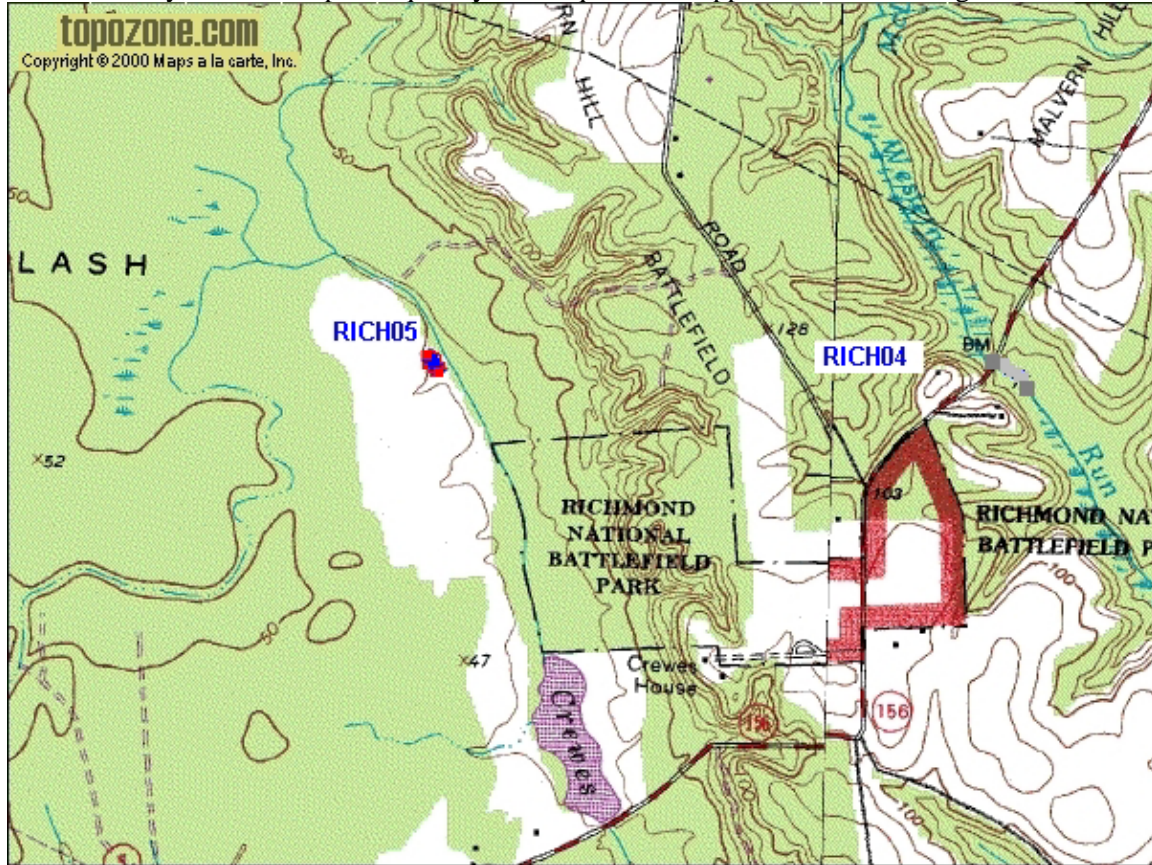
SITEID: RICH05

Description: Crewes Channel, RICH, Richmond National Battlefield Park, VA

AreaName: Crewes Channel

EventDate: 8/20/2002

Notes: Malvern Hill Unit. Shocked edges of stock pond for 20 minutes. Pond is in the open with tons of beaver activity, bottom drops off quickly and is quite slick approx. 80 meters long and 20 meters wide



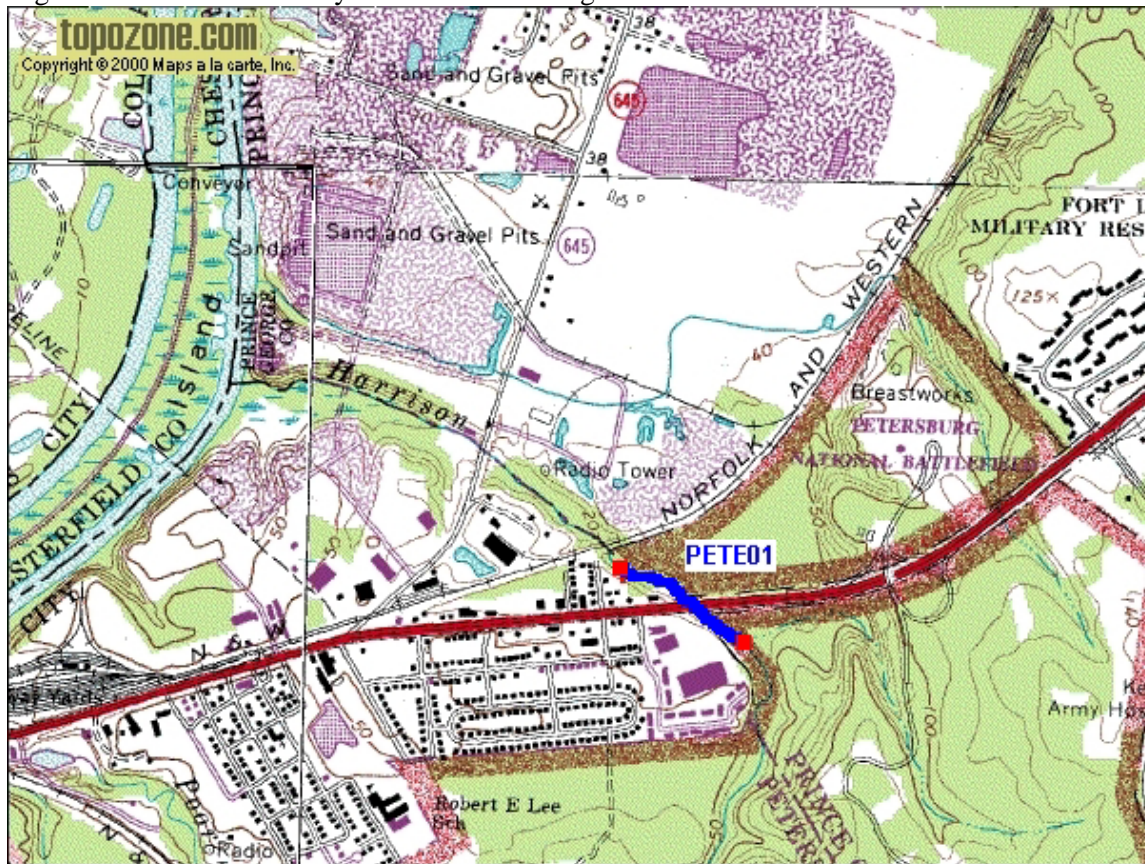
SITEID: PETE01

Description: Harrison\_Creek, PETE, Petersburg National Battlefield, VA

AreaName: Harrison Creek

EventDate: 8/21/2002

Notes: Site starts 150 meters below RT 36 and extends 50 meters above the road. Site is 90 to 100% canopy with sandy to silty substrate. Site is severely impacted by trash and debris including old car engine. Water was extremely low but still flowing between holes.





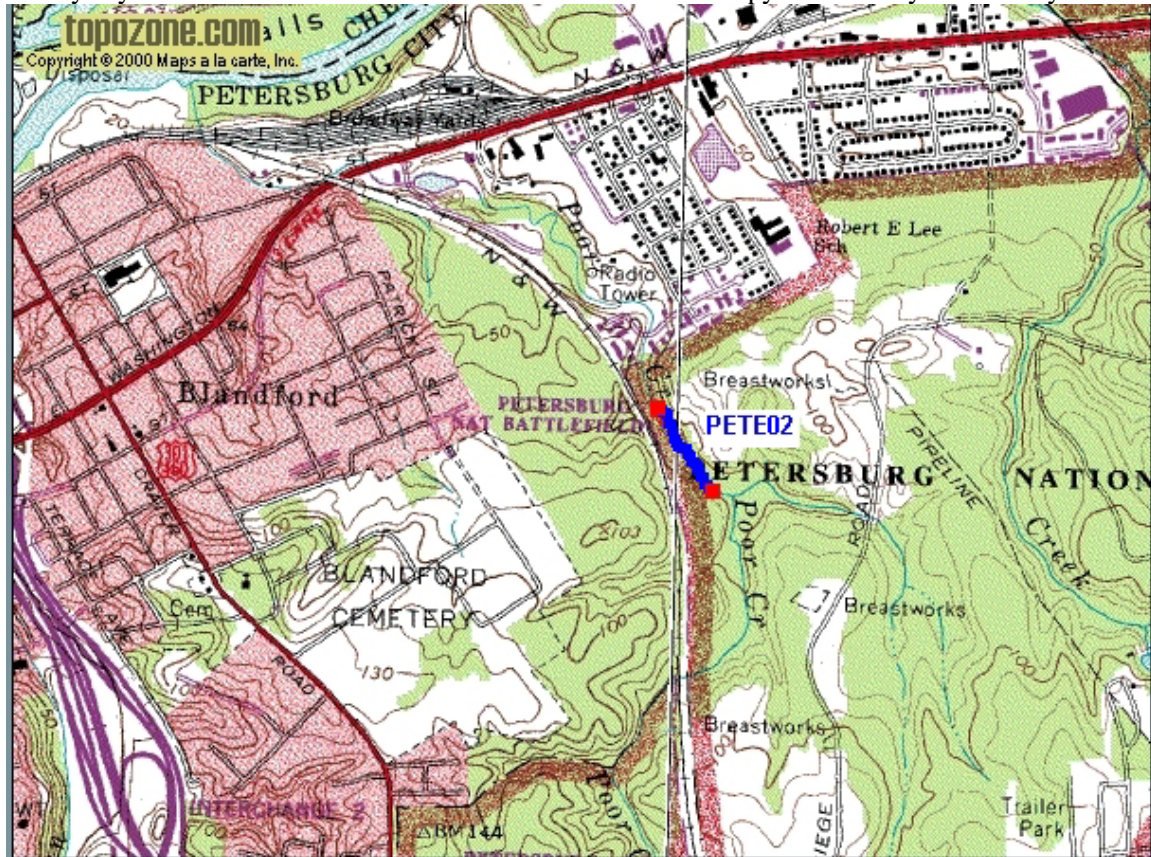
SITEID: PETE02

Description: Poor\_Creek, PETE, Petersburg National Battlefield, VA

AreaName: Poor Creek

EventDate: 8/21/2002

Notes: starts at boundary at subdivision and goes upstream to Ft. Lee water line crossing. Stream was mostly dry and the holes were shocked. Stream had 100% canopy and a sandy bottom. By Dave Demerest



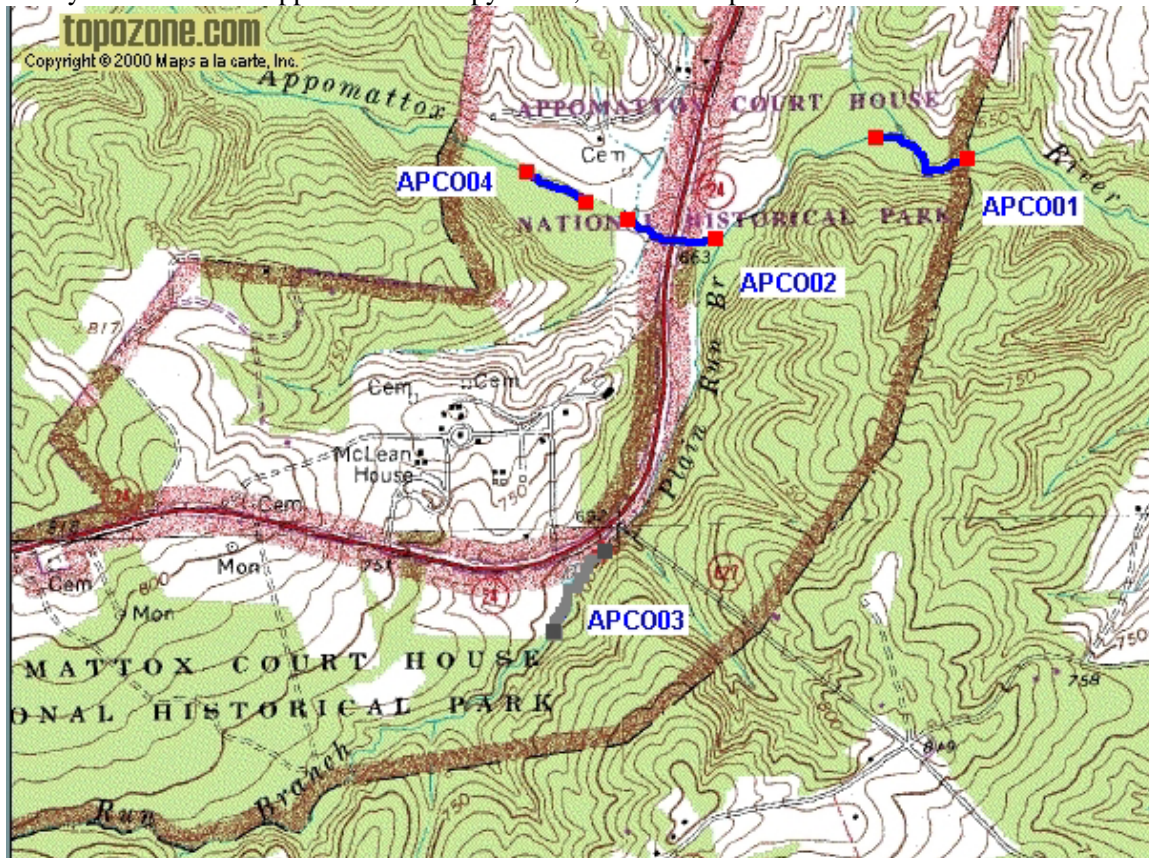
SITEID: APC001

Description: Appomattox\_River\_Lower, APCO, Appomattox Court House National Historical Park, VA

AreaName: Appomattox River

EventDate: 8/13/2002

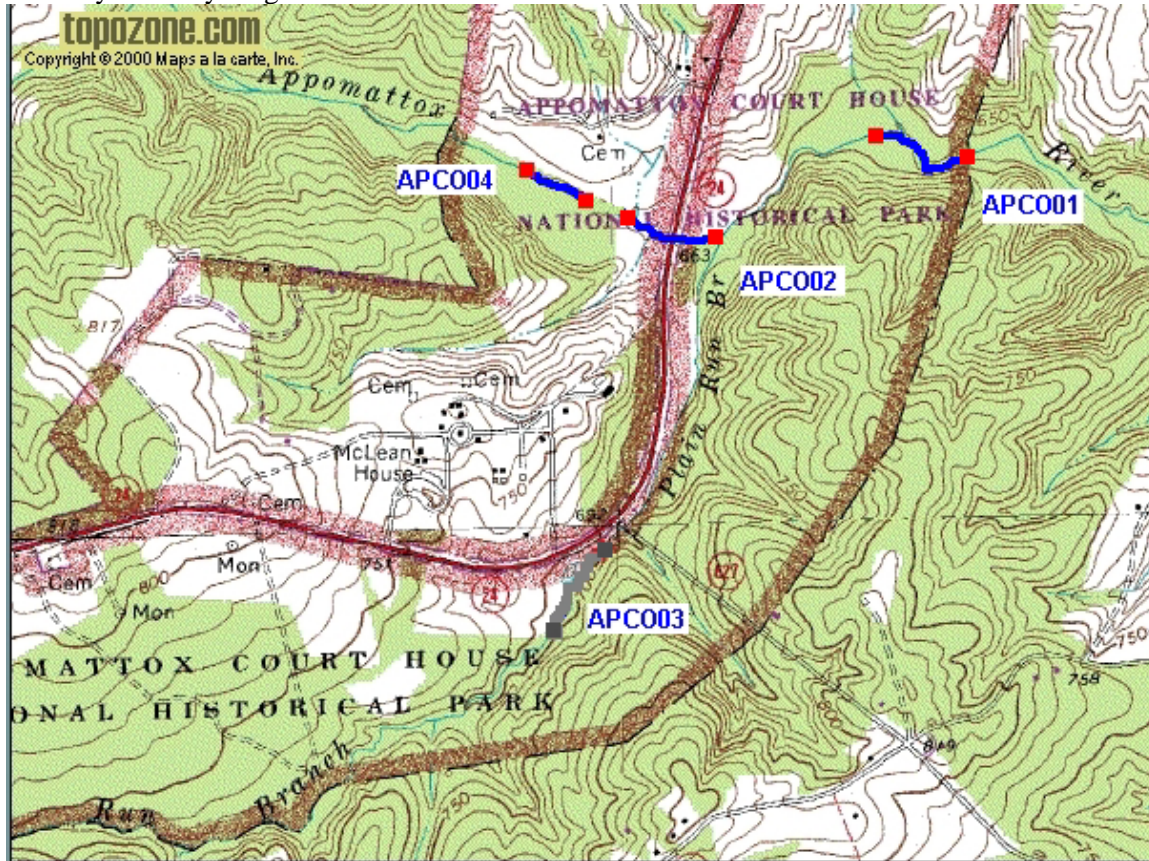
Notes: Low water bridge at lower Appomattox CHNHP boundary to point at 103 meters upstream. Rocky bottom stream approx. 90% canopy cover, nice mix of pool/riffle.





EventDate: 8/13/2002

Notes: Weir just below Rt. 60 to first riffle above bridge. Very silty little to no canopy cover, transect is basically one very long hole.



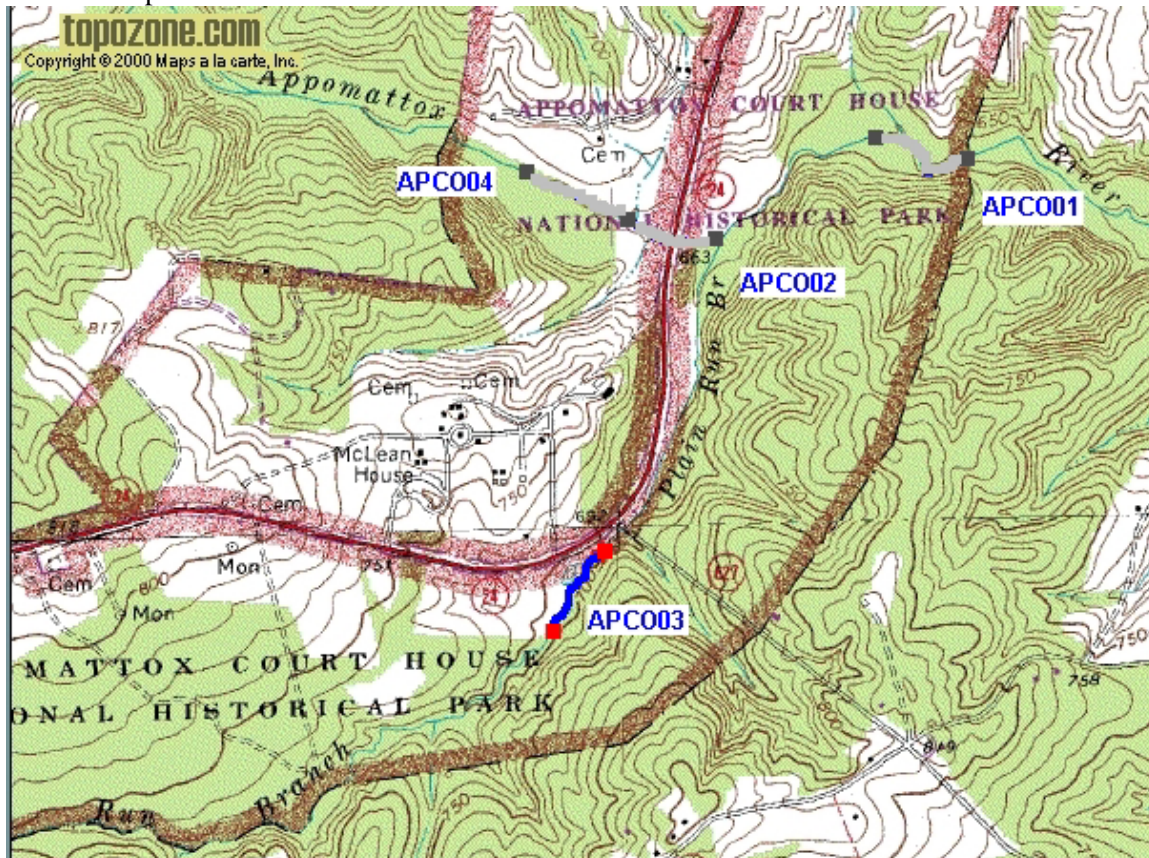
SITEID: APCO03

Description: Plain Run Branch, APCO, Appomattox Court House National Historical Park, VA

AreaName: Plain Run Branch

EventDate: 8/13/2002

Notes: Located at pull off on route 60 above route 627. Goes from the top of bedrock riffle to point 100 meters upstream. 100% canopy, fist to head sized cobble, some silt but not as bad as the mainstem site is about 50/50 pool/riffle.







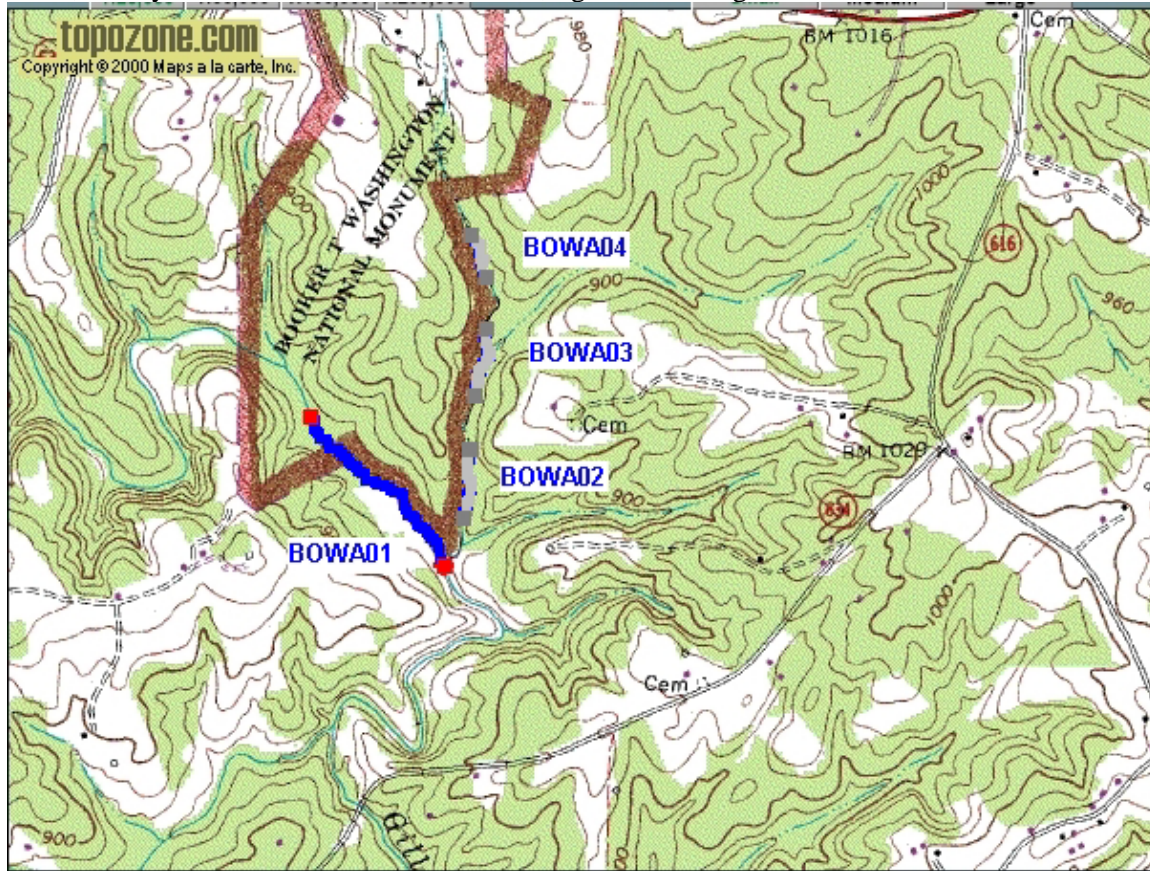
SITEID: BOWA01

Description: Gills\_Creek, BOWA, Booker T Washington National Monument, VA

AreaName: Gills Creek

EventDate: 8/14/2002

Notes: Starts at lower boundary on Gills Creek where Jack-O-Lantern Branch enters. 80% canopy cover, mostly sand bottom with cobble riffles, light silt loading.





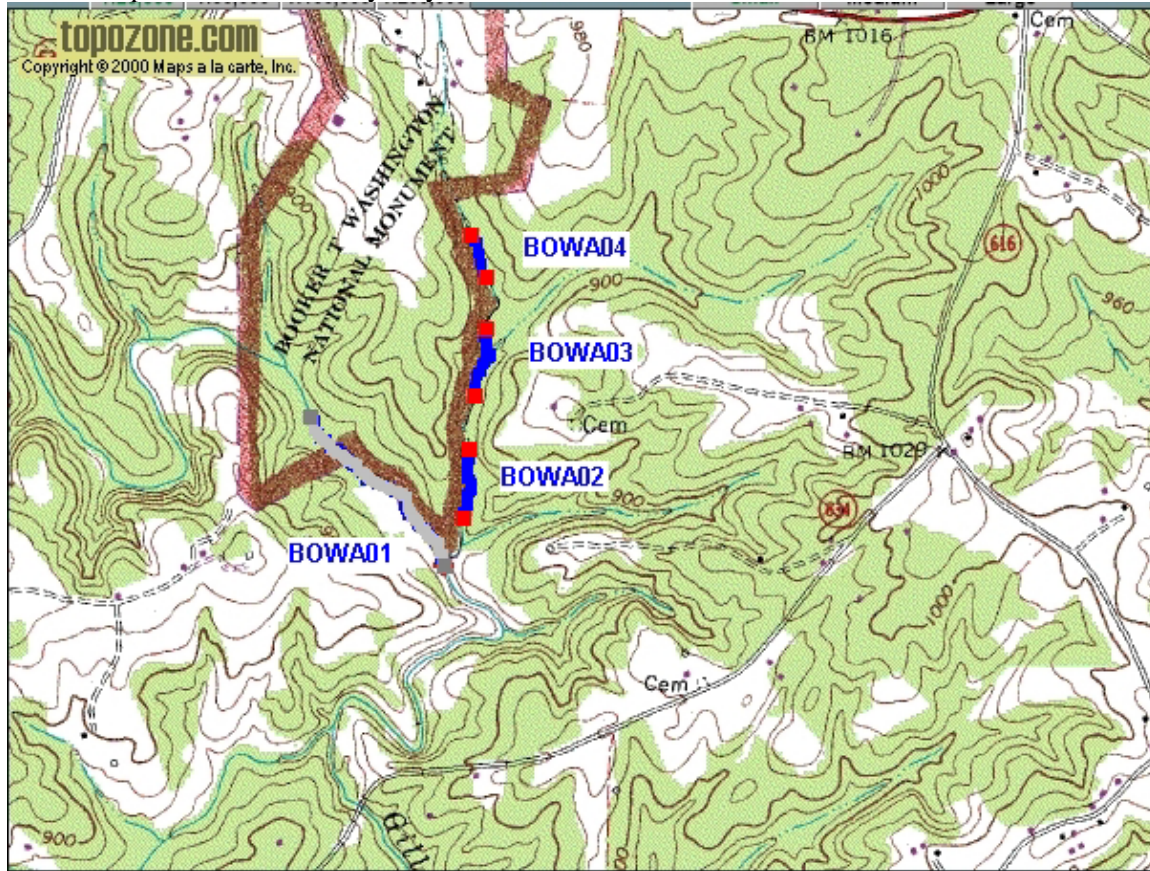
SITEID: BOWA02

Description: Jack-O-Lantern\_Branch\_Lower, BOWA, Booker T Washington National Monument, VA

AreaName: Jack-O-Lantern Branch

EventDate: 8/14/2002

Notes: Starts at 50 meters above Gills creek and proceeds a 100 meters from that point. Stream is 100%canopied but is Extremely silty.



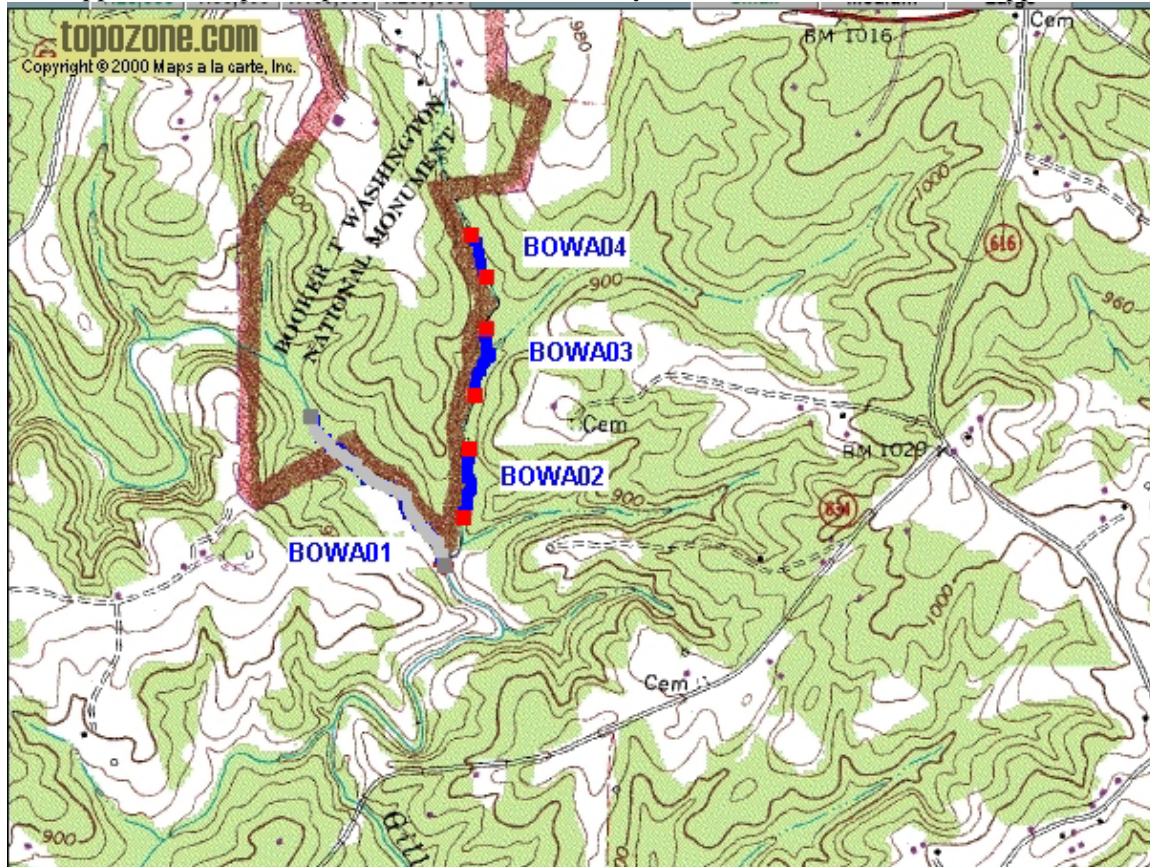
SITEID: BOWA03

Description: Jack-O-Lantern\_Branch\_Middle, BOWA, Booker T Washington National Monument, VA

AreaName: Jack-O-Lantern Branch

EventDate: 8/14/2002

Notes: Top of site is at trib. Entering from private property. The site is 100 meters long. Very silty. Mud approx. 5" deep on top of what should be a rocky bottom brook. See notes on upper site.





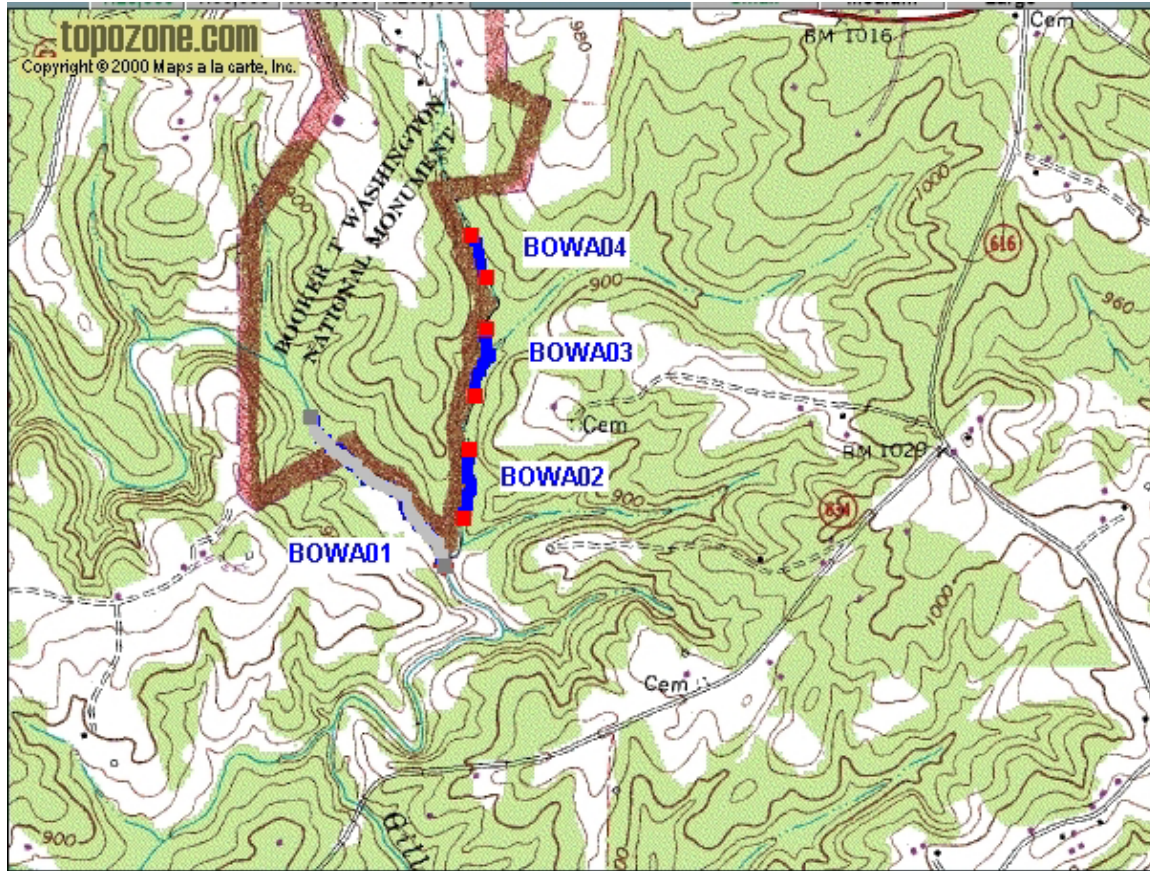
SITEID: BOWA04

Description: Jack-O-Lantern\_Branch\_Upper, BOWA, Booker T Washington National Monument, VA

AreaName: Jack-O-Lantern Branch

EventDate: 8/14/2002

Notes: Stream started approx. 100m above trib and is approx. 80m long. Rocky bottom but dry between holes.



## **Appendices**

## Appendix A: List of Fish Species Collected

Date	Species	Number	Stream	Park
07-Aug-02	Eastern Silvery Minnow	1	Hazel Run	FRSP
07-Aug-02	Sea Lamprey	2	Hazel Run	FRSP
07-Aug-02	Eastern Mosquitofish	2	Hazel Run	FRSP
07-Aug-02	Bluehead Chub	2	Hazel Run	FRSP
07-Aug-02	Tessellated Darter	2	Hazel Run	FRSP
07-Aug-02	Swallowtail Shiner	2	Hazel Run	FRSP
07-Aug-02	Creek Chubsucker	6	Deep Run	FRSP
07-Aug-02	Satinfin Shiner	2	Hazel Run	FRSP
08-Aug-02	Warmouth	1	Wilderness Run	FRSP
08-Aug-02	Brown Bullhead	1	Wilderness Run	FRSP
08-Aug-02	Yellow Bullhead	1	Wilderness Run	FRSP
08-Aug-02	Golden Shiner	1	Wilderness Run	FRSP
08-Aug-02	Creek Chubsucker	3	Wilderness Run	FRSP
08-Aug-02	Green Sunfish	2	Wilderness Run	FRSP
08-Aug-02	Swallowtail Shiner	1	Wilderness Run	FRSP
08-Aug-02	Golden Shiner	3	Wilderness Run	FRSP
13-Aug-02	Long-fin Darter	2	Appomattox River	APCO
13-Aug-02	Torrent Sucker	2	Appomattox River	APCO
13-Aug-02	Common Shiner	1	Appomattox River	APCO
13-Aug-02	Northern Hogsucker	1	Appomattox River	APCO
13-Aug-02	Creek Chubsucker	3	Appomattox River	APCO
13-Aug-02	Johnny Darter	4	Appomattox River	APCO
13-Aug-02	Stripeback Darter	3	Appomattox River	APCO
13-Aug-02	Swallowtail Shiner	2	Appomattox River	APCO
13-Aug-02	Rosefin Shiner	2	Appomattox River	APCO
13-Aug-02	Satinfin Shiner	3	Appomattox River	APCO
13-Aug-02	Bluntnose Minnow	1	Appomattox River	APCO
13-Aug-02	Mountain Redbelly Dace	1	Appomattox River	APCO
13-Aug-02	Pirate Perch	2	Appomattox River	APCO
13-Aug-02	Margined Madtom	2	Appomattox River	APCO
14-Aug-02	Quillback	2	Gills Creek	BOWA
14-Aug-02	Rosefin Shiner	3	Gills Creek	BOWA
14-Aug-02	White Shiner	2	Gills Creek	BOWA
14-Aug-02	Riverweed Darter	1	Gills Creek	BOWA
14-Aug-02	Roanoke Hogsucker	2	Gills Creek	BOWA
14-Aug-02	Margined Madtom	2	Gills Creek	BOWA
14-Aug-02	Crescent Shiner	3	Gills Creek	BOWA
14-Aug-02	V-lip Redhorse	5	Gills Creek	BOWA
14-Aug-02	Bluntnose Minnow	2	Gills Creek	BOWA
14-Aug-02	Black Jumprock	2	Gills Creek	BOWA

### List of Fish Species Collected

Date	Species	Number	Stream	Park
20-Aug-02	Mud Sunfish	2	Boatswain Creek	RICH
20-Aug-02	Swamp Darter	1	Beaverdam Creek	RICH
20-Aug-02	Sea Lamprey	3	Beaverdam Creek	RICH
20-Aug-02	Eastern Mudminnow	1	Beaverdam Creek	RICH
20-Aug-02	Swallowtail Shiner	1	Beaverdam Creek	RICH
20-Aug-02	Bluespotted Sunfish	2	Beaverdam Creek	RICH
20-Aug-02	Marginated Madtom	1	Beaverdam Creek	RICH
20-Aug-02	Golden Shiner	2	Beaverdam Creek	RICH
21-Aug-02	Sea Lamprey	1	Harrison Run	PETE
21-Aug-02	Least Brook Lamprey	1	Harrison Run	PETE
26-Aug-02	Mud Sunfish	1	Ni River Drainage	FRSP